

## Amendments to the Specification

Please replace the paragraph beginning on page 2, line 21 and ending on page 3, line 16 with the following rewritten paragraph:

On the transmitter side of the communication channel, the analog signal has a baseband bandwidth of  $\pm f$  and is converted to  $n$  bit data words by the analog to digital converter at a sampling rate exceeding the Nyquist rate of  $2f$  samples per second. These  $n$  bit data words are parallel data bit signals that are converted into a serial bit stream at a rate of  $2fn$  bps. To determine the ordering of the least to most significant bits of the data words in the serial bit stream, unique and easily identifiable synchronization frame words are periodically inserted into the serial data stream. These synchronization frames words are overhead data and are typically one to ten percent of the informational data words. This overhead data increases the required rate of bits transmitted per second to  $(2fn(1+s/100))$  bps where  $s$  is the percentage of the serial bit stream associated with synchronization frame words. To accomplish the communications at the original data bit, the serial stream including the frame words and redundant error correction bits must be reclocked to a higher data rate having a shorter bit duration time. In order to maintain the data rate of the data words when the serial bit stream has additional synchronization frame words, the serial bit stream will be clocked at a higher rate by bit synchronization. The received data stream must also therefore be coherently reclocked to recover the original data. Non-integer multiples of the transmitted data require frequency synthesizers and other digital word buffers.

1 Please replace the paragraph beginning on page 11, line 14 and  
2 ending on page 12, line 9 with the following rewritten paragraph:

3  
4 The laser crosslink is well suited for use in small satellites such  
5 as nanosatellites having very limited power resources. The laser  
6 crosslink has a reduced number of components reducing power  
7 requirements. One application of small satellites is a signal  
8 receiver that transmits digitized copies of the received signals to  
9 other satellites for processing. This has uses in either signal  
10 intelligence or for digital nonregenerative transponders. The laser  
11 crosslink offers lower power consumption and fewer parts by  
12 integrating a modulator and A/D converter with the transmitter and  
13 receiver. The laser crosslink reduces filter requirements for  
14 small satellites using direct modulation of a laser while reducing  
15 manufacturing tolerances for smaller satellites . No specialized  
16 modulator is required by the laser. No error correction is required  
17 because redundancy is added by the over sampling of the sigma delta  
18 converter. No bit or frame synchronization is needed between the  
19 two satellites because the output of the digital filter may be  
20 sampled at any time to reconstruct signal samples, that is, the  
21 communication is asynchronous. No framing is needed in the data  
22 stream because the data stream is self-synchronizing. Also, there  
23 is no need to order bits from most to least significant bits as in  
24 traditional digital data links because only the duration of the bit  
25 time is required for proper data detection. These and other  
26 advantages will become more apparent from the following detailed  
27 description of the preferred embodiment.

28 ///

1 Please replace the paragraph beginning on page 18, line 1 and  
2 ending on page 18, line 10 with the following rewritten paragraph:

3  
4 The laser communication crosslink system is preferably used  
5 for communicating analog signals in digital form. The laser  
6 communication crosslink system need not use parallel to serial  
7 conversion, frame synchronization, data reclocking bit  
8 synchronization, nor forward error correction. An analog signal  
9 may be communicated over the communication medium in digital form  
10 for recovering a digital value of the analog signal. Those skilled  
11 in the art can make enhancements, improvements, and modifications  
12 to the invention, and these enhancements, improvements, and  
13 modifications may nonetheless fall within the spirit and scope of  
14 the following claims.

15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28 ///